

---

**Repurposing of the anti-malaria drug chloroquine for Zika Virus treatment and prophylaxis.**

**Journal:** Sci Rep

**Publication Year:** 2017

**Authors:** Sergey A Shiryayev, Pinar Mesci, Antonella Pinto, Isabella Fernandes, Nicholas Sheets, Sujan Shresta, Chen Farhy, Chun-Teng Huang, Alex Y Strongin, Alysson R Muotri, Alexey V Tersikh

**PubMed link:** 29150641

**Funding Grants:** A treatment for Zika virus infection and neuroprotection efficacy

**Public Summary:**

In this publication, we showed that an old drug used to treat Malaria, Chloroquine, can prevent Zika virus infection both in human neural cells as well as in animal models.

**Scientific Abstract:**

One of the major challenges of the current Zika virus (ZIKV) epidemic is to prevent congenital foetal abnormalities, including microcephaly, following ZIKV infection of pregnant women. Given the urgent need for ZIKV prophylaxis and treatment, repurposing of approved drugs appears to be a viable and immediate solution. We demonstrate that the common anti-malaria drug chloroquine (CQ) extends the lifespan of ZIKV-infected interferon signalling-deficient AG129 mice. However, the severity of ZIKV infection in these mice precludes the study of foetal (vertical) viral transmission. Here, we show that interferon signalling-competent SJL mice support chronic ZIKV infection. Infected dams and sires are both able to transmit ZIKV to the offspring, making this an ideal model for in vivo validation of compounds shown to suppress ZIKV in cell culture. Administration of CQ to ZIKV-infected pregnant SJL mice during mid-late gestation significantly attenuated vertical transmission, reducing the ZIKV load in the foetal brain more than 20-fold. Given the limited side effects of CQ, its lack of contraindications in pregnant women, and its worldwide availability and low cost, we suggest that CQ could be considered for the treatment and prophylaxis of ZIKV.

---

**Source URL:** <https://www.cirm.ca.gov/about-cirm/publications/repurposing-anti-malaria-drug-chloroquine-zika-virus-treatment-and>